

IN THE CLAIMS

What is claimed is:

1. An apparatus for joining a first body vessel and a second body vessel, comprising:
 - 5 a) a tubular body having a proximal end, a distal end, and an onion portion formed near the distal end of the tubular body for engaging the first body vessel, the onion portion having a first position within a radial dimension of the tubular body and a second position outside the radial dimension of the tubular body;
 - b) a sleeve having an expandable cuff for engaging the second body vessel,
10 the sleeve having a lumen for receiving the tubular body; and
 - c) a plunger assembly for being received in the tubular body, the plunger assembly having a distal end arranged for deploying the onion portion from the first position to the second position.
- 15 2. The apparatus of claim 1, wherein the onion portion comprises a plurality of ribs defining a plurality of longitudinally oriented slots.
3. The apparatus of claim 2, wherein each of the ribs has at least one flexure line defined therein.
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4. The apparatus of claim 3, wherein each of the ribs has a proximal flexure line, a distal flexure line, and an intermediate flexure line defined therein.
5. The apparatus of claim 4, wherein the intermediate flexure line comprises
25 a double articulating joint.
6. The apparatus of claim 1, wherein the onion portion has a plurality of barbs for engaging the first body vessel, the barbs being arranged to face in a proximal direction when the onion portion is in the second position.
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7. The apparatus of claim 1, wherein the onion portion has at least one expanded portion disposed outside the radial dimension of the tubular body when the onion portion is in the second position for engaging the first body vessel.

8. The apparatus of claim 7, wherein the onion portion has a pair of expanded portions disposed outside the radial dimension of the tubular body when the onion portion is in the second position for engaging the first body vessel between the pair of expanded portions.

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9. The apparatus of claim 8, wherein the onion portion comprises a plurality of ribs, each of the ribs having a proximal flexure line, a distal flexure line, a pair of central flexure lines, a first intermediate flexure line between the central flexure lines and the distal flexure line, and a second intermediate flexure line between the central flexure lines and the proximal flexure line.

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10. The apparatus of claim 9, wherein the first and second intermediate flexure line comprise double articulating joints.

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11. The apparatus of claim 10, wherein the onion portion defines a radius about the first and second intermediate flexure lines that is less than the radial dimension of the tubular body.

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12. The apparatus of claim 1, wherein the distal end of the plunger assembly has an engaging element adapted to selectively couple with an engaging element provided at the distal end of the tubular body.

13. A method of joining a first body vessel and a second body vessel, comprising:

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a) passing an apparatus through the second body vessel, the apparatus having a tubular body and an onion portion, so that the onion portion is received in the first body vessel;

b) deploying the onion portion so that the onion portion moves to a position outside the radial dimension of the tubular body; and

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c) approximating and joining the first body vessel and the second body vessel.

14. The method of claim 13, wherein the step of approximating includes deploying an expandable cuff so as to engage the second body vessel.

15. The method of claim 14, wherein onion portion being disposed on the tubular body, and a sleeve, the sleeve having the expandable cuff, and the method further comprises moving the tubular body and the sleeve with respect to one another so as to approximate the first and second body vessels.

16. The method of claim 13, wherein the apparatus has a tubular body, the onion portion being disposed on the tubular body, and a plunger assembly for deploying the onion portion, and wherein the method includes advancing the plunger assembly so as to deploy the onion portion.

17. The method of claim 15, further comprising securing the position of the tubular body and sleeve with respect to one another.